

WHAT IS CLAIMED IS:

1. A plasma processing method which supplies plasma processing gas into a plasma process chamber, sets the pressure inside said plasma process chamber to the preset value, and generates plasma by capacitatively coupled discharge, emission of electromagnetic wave by radio frequency displacement current and formation of magnetic field, thereby processing a substrate;

said plasma processing method comprises steps of:

controlling radiated electromagnetic wave power by the radio frequency displacement current control means forming a resonant circuit, and

processing a substrate while plasma distribution is controlled during plasma processing.

2. A plasma processing method according to Claim 1, further characterized in that plasma distribution is controlled to ensure that plasma processing of said substrate is completed uniformly for every plasma processing or during plasma processing according to uneven conditions of the substrate to be processed.

3. A plasma processing method which supplies plasma processing gas into a plasma process chamber, sets the pressure inside said plasma process chamber to the preset value, and generates plasma by capacitatively coupled discharge, emission of electromagnetic wave by radio frequency displacement current and formation of magnetic field, thereby processing a substrate;

said plasma processing method comprises steps of:

setting displacement current frequency within the range from 10 MHz to 200 MHz,

controlling radiated electromagnetic wave power by the radio frequency

displacement current control means forming the resonant circuit,
controlling plasma distribution during plasma processing, and
processing a substrate at the magnetic field strength within the range from
 $2 \times 10^{-4}\text{T}$ to 10^{-2}T .

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4. A plasma processing method according to Claim 3, further
characterized in that plasma distribution is controlled to ensure that plasma
processing of said substrate is completed uniformly for every plasma processing or
during plasma processing according to uneven conditions of the substrate to be
processed.

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